

III. REMARKS

1. Claims 1 and 7-10 remain in the application. Claims 2-6 and 11 have been cancelled without prejudice. Claims 12-21 are new. Claims 1 and 7-10 have been amended.

Support for the amendments may be found in the specification, for example, on page 3, lines 20-29, and page 5, lines 11-28.

2. Replacement sheets for Figures 1 and 2 are included with this response.

3. Claims 8 and 9 have been amended to overcome the informalities objections.

4. Applicants respectfully submit that claims 1 and 7-10 are patentable over the combination of Bloom (US 5,764,348) in view of Heffner (US 5,227,623) under 35 USC 103(a).

The combination of Bloom and Heffner fails to disclose or suggest:

coding the first measurement signal with a first code and the second measurement signal with a second code;

feeding the first coded measurement signal into the device under test in one direction and the second coded measurement signal in another direction;

receiving a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal; and

detecting the reflected and transmitted signals.

all as substantially recited by claims 1 and 9.

The Office Action correctly points out that Bloom fails to disclose or suggest coding measurement signals.

Applicants respectfully submit that Heffner also fails to disclose coding measurement signals.

There is no reference to coding at all in Heffner. Heffner discloses providing a set of differently polarized signals to a DUT and measuring the power response for each. Contrary to the statements in the Office Action, Applicant respectfully submits that this is not "coding" a beam. The provision of different polarizations is not a viable coding technique. Heffner is directed to measuring the amount of polarization mode dispersion caused by the DUT. Different DUT's will affect the polarization mode dispersion in different ways. Thus, the DUT affects the polarization in a variable manner that would render any polarization coding ineffective.

The Office Action further alleges that Heffner discloses coding by the use of different time delays. Applicants respectfully submit that Heffner fails to disclose this. To the contrary, Heffner discloses the (well known) fact that output principal states of polarization are associated with different group delays, or in other words, any polarization dependent (or birefringent) device will show two main polarization axes each having different group delays, that is, differing times to travel a modulated signal along the transmission path.

Furthermore, Heffner's detector is not disclosed as being capable of distinguishing among any signal coding.

At least for these reasons, the combination of Bloom and Heffner fails to disclose or suggest all the features of claims 1 and 9 and therefore fails to render claims 1 and 7-10 unpatentable.

New claims 12-20 depend from claims 1 or 9 and are directed to coding the first and second measurement signal by modulating them with first and second frequencies, balancing the optical path

lengths through the unit under test, using polarization diversity receivers for detection, and using frequency selective detection.

None of the cited references disclose or suggest these features in combination with the independent claims.


Claim 21 is new and is directed to a method of determining optical properties of a device, similar to claim 1 that further includes coding the first and second measurement signals by modulating the first measurement signal with a first frequency and the second measurement signal with a second frequency.

Neither Bloom nor Heffner has any disclosure related to coding first and second measurement signals by modulating them with first and second frequencies, respectively.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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24 May 2006
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I hereby certify that this correspondence is being deposited with the United States Postal Service on the date indicated below as first class mail in an envelope addressed to the Commissioner of Patents, P.O. Box 1450, Alexandria VA 22313-1450.

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